Claims

1. A shrink film comprising a polyethylene film, characterized in that said polyethylene is an ethylene copolymer mixture having a molecular weight distribution in the range 10 to 35, a density of 915 to 940 kg/m^3, a weight average molecular weight of at least 100000 D and an $MFR_{2.16}$ (190°C) of 0.1 to 0.9 kg/m^3, which copolymer mixture is produced by a two or more stage copolymerization of ethylene and 2 to 10% mole (relative to ethylene) of a C_{3-12} alpha-olefin comonomer in a series of reactors including at least one slurry loop reactor and at least one gas phase reactor using a heterogeneous Ziegler-Natta catalyst.

2. A shrink film as claimed in claim 1 wherein the molecular weight of the copolymer is 150000 to 300000D.

3. A shrink film as claimed in claim 1 wherein the molecular weight of the copolymer is at least 226,000 D.

4. A shrink film as claimed in any one of claims 1 to 3 wherein the MWD of the copolymer is between 15 and 23.

5. A shrink film as claimed in any one of claims 1 to 4 wherein said copolymer is bimodal and comprises a lower molecular weight component and a higher molecular weight component.

6. A shrink film as claimed in any one of claims 1 to 5 wherein said copolymer comprises a lower molecular weight component and a higher molecular weight component both formed from an ethylene/butene copolymer.

7. A shrink film as claimed in any one of claims 1 to 6 wherein the density of the lower molecular weight component is at least 945 kg/m^3.

8. A shrink film as claimed in any one of claims 1 to 7 wherein the MFR_2 of the copolymer is 0.15 to 0.6 g/10min.

9. A shrink film as claimed in any one of claims 1 to 8 wherein the value of a films' dart drop (g)/thickness (μm) is at least 4.5.

10. A shrink film as claimed in any one of claims 1 to 9 wherein said film has a thickness of 20 to 120 μm.

11. A shrink film as claimed in any one of claims 1 to 10 wherein said shrink film is a multilayer film.

12. A shrink film as claimed in any one of claims 1 to 10 wherein said shrink film is unilamellar.

13. A shrink film as claimed in claim 12 having a thickness of 100 to 200 μm.

14. Use of polyethylene film comprising an ethylene copolymer mixture having a molecular weight distribution in the range 10 to 35, a density of 915 to 940 kg/m^3, a weight average molecular weight of at least 100000 D and an $MFR_{2.16}$ (190°C) of 0.1 to 0.9 kg/m^3, which copolymer mixture is produced by a two or more stage copolymerization of ethylene and 2 to 10% mole (relative to ethylene) of a C_{3-12} alpha-olefin comonomer in a series of reactors including at least one slurry loop reactor and at least one gas phase reactor using a heterogeneous Ziegler-Natta catalyst in the manufacture of a shrink film.

15. A process for wrapping an object comprising applying a shrink film about said object and shrinking said film by the application of heat thereto, characterized in that said film is a shrink film

according to claim 1 to 13.

16. An object shrink wrapped with a shrink film according to claim 1 to 13.

17. A polyolefin shrink film having a Dart drop value (g)/film thickness (μm) of 5 g/μm or more.

18. The shrink film of claim 17 comprising an ethylene copolymer/copolymer mixture.

19. The shrink film of claim 17 or 18 wherein the film is unilamellar.

20. The shrink film of claim 17 to 19 wherein Dart drop value (g)/film thickness (μm) is 6 g/μm or more.